

Patent  
52478-0900

**IN THE CLAIMS:**

- 1           1.     (Currently Amended) A multi-media information playback device which plays  
2     back multi-media information [recorded in a recording medium] comprising:
- 3                 (a)     a [disc] recording medium having pieces of page information successively  
4     stored in a storage area, each piece of page information being made up of multi-media  
5     information that describes contents of a plurality of screen images, the page information  
6     including:
- 7                     (1)     a partial image list having a pair of partial image information  
8                     showing a partial image of a screen image and display state information showing  
9                     display state of the partial image, and
- 10                    (2)     control information which describes a command to be executed  
11                    according to an input signal, including a display state change command  
12                    instructing to change the display state of the partial image;
- 13                 (b)     a page information read means for reading a piece of page information  
14     from the [disc] recording medium;
- 15                 (c)     a display data creation means for creating display data of the screen image  
16     by placing the partial image shown by the partial image information on a screen;
- 17                 (d)     a display means for displaying each display data created by the display  
18     data creation means;
- 19                 (e)     an input means for receiving an input signal from an operator; and
- 20                 (f)     a command execution means for detecting the input signal inputted by the  
21     operator, judging whether the input signal corresponds to the command described by the control  
22     information in the page information read by the page information read means, and instructing the

BEST AVAILABLE COPY

Patent  
52478-0900

23 display data creation means to create new display data by changing the display state of the  
24 corresponding partial image according to the display state change command when the input  
25 signal corresponds to the display state change command;

26 wherein the display data creation means creates new display data according to the  
27 command execution means.

1 2. (Original) The multi-media information playback device of claim 1, wherein the  
2 page information includes:

3 (a) the partial image list;

4 (b) the control information including an animation display command  
5 instructing to change and display the display state information of the partial image corresponding  
6 to elapsed time; and

7 (c) time sequence control information including animation control  
8 information which describes values of the display state information of the partial image  
9 corresponding to the elapsed time;

10 wherein the command execution means includes:

11 (a) a first timer for measuring the elapsed time after start of activation;  
12 and

13 (b) an animation display command execution unit for activating the  
14 first timer when an input signal corresponding to the animation display command  
15 is detected, calculating values of the display state information corresponding to  
16 the elapsed time of each of the partial images based on the animation control  
17 information at predetermined times, instructing the display data creation means to

BEST AVAILABLE COPY

Patent  
52478-0900

18 create new display data by changing the display state of the partial image  
19 according to the calculated values of the display state information, and stopping  
20 the first timer when execution of the animation display command is completed;  
21 wherein the display data creation means creates new display data according to the  
22 animation display command execution unit.

1 3. (Original) The multi-media information playback device of claim 2, wherein the  
2 page information includes:

3 (a) the partial image list having a pair of the partial image information and  
4 display state information, the display state information including X-Y coordinates showing a  
5 display position of the partial image to be displayed on the screen, X-Y enlargement rates  
6 showing a ratio of size of the partial image shown by the partial image information and a partial  
7 image to be displayed on the screen, and a rotational angle between the partial image shown by  
8 the partial image information and a partial image to be displayed on the screen; and

9 (b) time sequence control information including the animation control  
10 information which describes at least one among the values of the X-Y coordinates, the X-Y  
11 enlargement rates, and the rotational angle corresponding to the elapsed time;

12 wherein the animation display command execution unit includes:

13 (a) an X-Y coordinates calculation unit for calculating the X-Y  
14 coordinates corresponding to the elapsed time based on the animation control  
15 information at predetermined times;

BEST AVAILABLE COPY

Patent  
52478-0900

- 16 (b) an X-Y enlargement rate calculation unit for calculating the X-Y  
17 enlargement rates corresponding to the elapsed time based on the animation  
18 control information at predetermined times; and
- 19 (c) a rotational angle calculation unit for calculating the rotational  
20 angle corresponding to the elapsed time based on the animation control  
21 information at predetermined times.

1 4. (Currently Amended) The multi-media information playback device of claim 3,  
2 wherein there is at least one storage area on the [disc] recording medium for [successively]  
3 storing page information and at least one storage area for [successively] storing time sequence  
4 information, the page information including:

- 5 (a) the partial image list,  
6 (b) the control information including a time sequence processing start  
7 command instructing to start execution of time sequence processing corresponding to the elapsed  
8 time, and  
9 (c) time sequence control information including time sequence processing  
10 control information having a name of time sequence information to be played back according to  
11 the time sequence processing start command, IDs showing contents of the time sequence  
12 information to be played back at predetermined times, and playback state information describing  
13 how the time sequence information should be played back in accordance with display of the  
14 partial image shown by the partial image information in the partial image list;  
15 wherein the time sequence information has information, which should be played  
16 back according to the elapsed time, stored in order of playback;

Patent  
52478-0900

17 wherein the command execution means includes:

18 (a) a second timer for measuring the elapsed time after the start of  
19 activation; and

20 (b) a time sequence processing execution unit for activating the second  
21 timer when an input signal corresponding to the time sequence processing start  
22 command is detected, designating contents of the time sequence information  
23 corresponding to the elapsed time, and stopping the second timer when playback  
24 of the time sequence information is completed;

25 wherein the multi-media information playback device further includes:

26 (a) a page storage means, which is implemented by RAM, for storing  
27 the page information read by the page information read means;

28 (b) a time sequence information read means for reading the time  
29 sequence information designated by the time sequence processing execution unit  
30 from the [disk] recording medium; and

31 (c) a playback means for playing back the time sequence information  
32 read by the time sequence information read means, and instructing the display  
33 means to display the time sequence information.

1 5. (Original) The multi-media information playback device of claim 4, wherein the  
2 page information includes:

3 (a) the partial image list,

4 (b) the control information, and

BEST AVAILABLE COPY

Patent  
52478-0900

5 (c) time sequence control information including time sequence processing  
6 control information having a name of first time sequence information as time sequence  
7 information to be played back according to the time sequence processing start command, IDs of  
8 sound information to be played back at predetermined times, and playback state information  
9 which describes how sound information should be played back in accordance with display of the  
10 partial image shown by the partial image information in the partial image list;

11 wherein the time sequence information includes the first time sequence  
12 information comprising sound information corresponding to the ID of sound information, the  
13 sound information being divided into equal predetermined sizes and placed in order of playback  
14 corresponding to the elapsed time;

15 wherein the time sequence processing execution unit includes a first time  
16 sequence processing execution unit for designating the sound information in the first time  
17 sequence information corresponding to the elapsed time at predetermined times, when a name of  
18 the first time sequence information is shown by the time sequence processing control  
19 information;

20 wherein the playback means includes a sound playback unit for playing back the  
21 sound information.

1 6. (Original) The multi-media information playback device of claim 4, wherein the  
2 page information includes:

- 3 (a) the partial image list,  
4 (b) the control information, and

BEST AVAILABLE COPY

Patent  
52478-0900

5 (c) the time sequence control information including a name of a second time  
6 sequence information as time sequence information to be played back according to the time  
7 sequence processing start command, pairs of IDs of sound information and image information to  
8 be played back at predetermined times, and the playback state information which describes at  
9 least one of dynamic picture and animation should be displayed in an area relating to the partial  
10 image shown by the partial image information;

11 wherein the time sequence information includes the second time sequence  
12 information comprising sound information divided into equal predetermined sizes and image  
13 information showing an image of at least one of the dynamic picture and the animation, the  
14 sound information and the image information being placed in order of playback corresponding to  
15 the elapsed time;

16 wherein the time sequence processing execution unit includes a second time  
17 sequence processing execution unit for designating sound information and image information in  
18 the second time sequence information corresponding to the elapsed time at predetermined times  
19 when the second time sequence information is shown by the time sequence processing control  
20 information, and instructing the display data creation means to create new display data by  
21 placing the partial image read by the time sequence information read means in an area shown by  
22 the playback state information;

23 wherein the display data creation means creates new display data according to the  
24 second time sequence processing execution unit.

1 7. (Currently Amended) A multi-media information record device for recording  
2 multi-media information in a [disc] recording medium, comprising:

BEST AVAILABLE COPY

Patent  
52478-0900

3           (a)    a partial image storage means for storing the partial image information of  
4   at least one partial image in one partial image file, the partial image information being a part of  
5   the screen image;

6           (b)    a partial image list input means for receiving input of a name of at least  
7   one partial image file in the partial image storage means and display state information showing  
8   display state of the partial image shown by the partial image information in the partial image file;

9           (c)    a page information storage means for having a plurality of separate small  
10   storage areas, each of which is used for storing at least a piece of page information which is  
11   made up of multi-media information that describes contents of a plurality of screen images;

12          (d)    a partial image list write means for writing a pair of the partial image  
13   information and the display state information in a first small storage area in the page information  
14   storage means along with the Ids of the partial image information and the display state  
15   information, after reading partial image information from the partial image file whose name is  
16   inputted, the display state information being inputted according to the partial image information;

17          (e)    a control information input means for receiving input of control  
18   information which includes a name of input signal and display state change command instructing  
19   to change display state of the partial image corresponding to the input signal;

20          (f)    a control information write means for writing the inputted control  
21   information in a second small storage area in the page information storage means; and

22          (g)    a page information record means for [successively] recording information,  
23   which is written as a piece of page information in each small storage area in the page information  
24   storage means, in a storage area on the [disc] recording medium.



Patent  
52478-0900

1           8.     (Original) The multi-media information record device of claim 7, wherein the  
2 control information includes animation display command instructing to change and display state  
3 information of the partial image corresponding to the elapsed time;

4                 wherein the control information input means further includes an animation display  
5 command input unit for receiving input of a pair of an input signal and the animation display  
6 command;

7                 wherein the multi-media information record device further includes:

8                     (a)     a time sequence control information input means for receiving time  
9 sequence control information including animation control information, the  
10 animation control information describing how display state of the partial image  
11 changes according to the elapsed time; and

12                    (b)     a time sequence control information write means for writing the  
13 inputted time sequence control information in a third small storage area in the  
14 page information storage means.

1           9.     (Original) The multi-media information record device of claim 8, wherein the  
2 partial image list input means further includes a display state information input unit for receiving  
3 input of display state information for each piece of partial image information, the display  
4 information including X-Y coordinates showing a display position of the partial image to be  
5 displayed on the screen, X-Y enlargement rates showing a ratio of size of the partial image  
6 shown by the partial image information and a partial image to be displayed on the screen, and a  
7 rotational angle between the partial image shown by the partial image information and a partial  
8 image to be displayed on the screen;

Patent  
52478-0900

9            wherein the time sequence control information input means receives input of  
10 animation control information which describes how at least one among the values of the X-Y  
11 coordinates, the X-Y enlargement rates, and the rotational angle changes corresponding to the  
12 elapsed time.

1            10. (Original) A multi-media information playback device for reading multi-media  
2 information from a data server connected via a network and playing back the multi-media  
3 information, comprising:

4            (a) a page information read means for reading a piece of page information,  
5 which is made up of multi-media information that describes contents of a plurality of screen  
6 images, stored as one file from a data server connected via a network, the page information  
7 including:

8            (1) a partial image list having at least one pair of the partial image  
9 information showing a partial image of a screen image and display state  
10 information describing display state of the partial image, and

11            (2) control information which describes a command to be executed  
12 according to an input signal, including a display state change command  
13 instructing to change the display state of the partial image;

14            (b) a display data creation means for creating display data of the screen image  
15 by placing the partial image shown by the partial image information on a screen;

16            (c) a display means for displaying each display data created by the display  
17 data creation means;

18            (d) an input means for receiving an input signal from an operator; and

Patent  
52478-0900

19 (e) a command execution means for detecting the input signal inputted by the  
20 operator, judging whether the input signal corresponds to the command described by the control  
21 information in the page information read by the page information read means, and instructing the  
22 display data creation means to create new display data by changing the display state of the  
23 corresponding partial image according to the display state change command when the input  
24 signal corresponds to the display state change command;  
25 wherein the display data creation means creates new display data according to the  
26 command execution means.

1 11. (Original) The multi-media information playback device of claim 10, wherein the  
2 page information including:

3 (a) the partial image list;  
4 (b) the control information including the animation display instructing to  
5 change and display state information of the partial image corresponding to the elapsed time; and  
6 (c) time sequence control information including animation control  
7 information which describes values of display state information of the partial image  
8 corresponding to the elapsed time;

9 wherein the command execution means includes:

10 (a) a first timer for measuring the elapsed time after start of activation;  
11 and  
12 (b) an animation display command execution unit for activating the  
13 first timer when an input signal corresponding to the animation display command  
14 is detected, calculating values of the display state information corresponding to

Patent  
52478-0900

15 the elapsed time of each of the partial images based on the animation control  
16 information at predetermined times, instructing the display data creation means to  
17 create new display data by changing the display state of the partial image  
18 according to the calculated values of the display state information, and stopping  
19 the first timer when execution of the animation display command is completed;  
20 wherein the display data creation means creates new display data according to the  
21 animation display command execution unit.

1 12. (Original) The multi-media information playback device of claim 11, wherein the  
2 page information including:

3 (a) the partial image list having of at least one pair of the partial image  
4 information and the display state information including X-Y coordinates showing a display  
5 position of the partial image to be displayed on the screen, X-Y enlargement rates showing a  
6 ratio of size of the partial image shown by the partial image information and the partial image to  
7 be displayed on the screen, and a rotational angle between the partial image shown by the partial  
8 image information and the partial image to be displayed on the screen;

9 (b) the control information including the animation display command; and

10 (c) time sequence control information including the animation control  
11 information which describes at least one among the values of the X-Y coordinates, the X-Y  
12 enlargement rates, and the rotational angle corresponding to the elapsed time;

13 wherein the animation display command execution unit includes:

Patent  
52478-0900

14 (a) an X-Y coordinates calculation unit for calculating the X-Y  
15 coordinates corresponding to the elapsed time based on the animation control  
16 information at predetermined times;

17 (b) an X-Y enlargement rate calculation unit for calculating the X-Y  
18 enlargement rates corresponding to the elapsed time based on the animation  
19 control information at predetermined times; and

20 (c) a rotational angle calculation unit for calculating the rotational  
21 angle corresponding to the elapsed time based on the animation control  
22 information at predetermined times.

1 13. (Original) The multi-media information playback device of claim 12, wherein the  
2 page information including:

3 (a) the partial image list;

4 (b) the control information including a time sequence processing start  
5 command instructing to start execution of time sequence processing corresponding to the elapsed  
6 time; and

7 (c) time sequence control information including time sequence processing  
8 control information having a name of time sequence information to be played back according to  
9 the time sequence processing start command, Ids showing contents of the time sequence  
10 information to be played back at predetermined times, and playback state information describing  
11 how the time sequence information should be played back in accordance with display of the  
12 partial image shown by the partial image information in the partial image list;

13 wherein the command execution means includes:

52478.0900PRICE/NTV450030

Patent  
52478-0900

14 (a) a second timer for measuring the elapsed time after the start of  
15 activation; and

16 (b) a time sequence processing execution unit for activating the second  
17 timer when an input signal corresponding to the time sequence processing start  
18 command is detected, designating contents of the time sequence information  
19 corresponding to the elapsed time, and stopping the second timer when playback  
20 of the time sequence information is completed;

21 wherein the multi-media information playback device further includes:

22 (a) a page storage means, which is implemented by RAM, for storing  
23 the page information read by the page information read means;

24 (b) a time sequence information read means for reading contents of the  
25 time sequence information designated by the time sequence processing execution  
26 unit from the time sequence information stored as one file in the data server via a  
27 network, the time sequence information having contents in order of playback  
28 corresponding to the elapsed time and its name being included in the time  
29 sequence control information; and

30 (c) a playback means for playing back the time sequence information  
31 ready by the time sequence information read means, and instructing the display  
32 means to display the time sequence information.

Patent  
52478-0900

1           14. (Original) The multi-media information playback device in claim 13, wherein the  
2 page information including:

3                   (a) the partial image list;  
4                   (b) the control information; and  
5                   (c) time sequence control information including time sequence processing  
6 control information having a name of the first time sequence information as time sequence  
7 information to be played back according to the time sequence processing start command, sound  
8 information to be played back according to the elapsed time of the first time sequence  
9 information, and

10                   playback state information describing how the sound information should be  
11 played back in accordance with display of the partial image shown by partial image information  
12 in the partial image list;

13                   wherein the time sequence processing execution unit includes a first time  
14 sequence processing execution unit for designating the sound information in the first time  
15 sequence information corresponding to the elapsed time at predetermined times, when a name of  
16 the first time sequence information is shown by the time sequence processing control  
17 information;

18                   wherein the time sequence information read means reads the sound information  
19 designated by first time sequence processing execution unit from the first time sequence  
20 information stored as one file in the data server, the first time sequence information describing  
21 the divided sound information in order of playback corresponding to the elapsed time and its  
22 name being included in the time sequence control information;

BEST AVAILABLE COPY

Patent  
52478-0900

23                wherein the playback means includes a sound playback unit for playing back the  
24        sound information.

1            15.        (Original) The multi-media information playback device of claim 13, wherein the  
2        page information including:

3                    (a)        the partial image list;

4                    (b)        the control information; and

5                    (c)        the time sequence control information including a name of the second time  
6        sequence information as time sequence information to be played back according to the time  
7        sequence processing start command, a pair of sound information and image information to be  
8        played back corresponding to the elapsed time of the second time sequence information, and  
9        playback state information which describes at least one of dynamic picture and animation should  
10       be displayed in the area relating to the partial image shown by the partial image information;

11                wherein the time sequence processing execution unit includes a second time  
12       sequence processing execution unit for designating sound information and image information in  
13       the second time sequence information corresponding to the elapsed time at predetermined times  
14       when the second time sequence information is shown by the time sequence processing control  
15       information, and instructing the display data creation means to create new display data by  
16       placing the partial image read by the time sequence information read means in an area shown by  
17       the playback state information;

18                wherein the time sequence information read means reads the sound information  
19       and the screen image information designated by the second time sequence processing execution  
20       unit from the second time sequence information stored as one file in the data server, the time



Patent  
52478-0900

21 sequence information describing the divided sound information in order of playback and the  
22 screen image information describing one screen image of at least one of motion picture and  
23 animation corresponding to the elapsed time and its name being included in the time sequence  
24 control information;

25 wherein the display data creation means creates new display data according to the  
26 second time sequence processing execution unit.

1 16. (Original) A multi-media information record device for recording multi-media  
2 information in a data server connected via a network, comprising:

3 (a) a partial image storage means for storing the partial image information of  
4 at least one partial image in one partial image file, the partial image information being a part of  
5 the screen image;

6 (b) a partial image list input means for receiving input of a name of at least  
7 one partial image file in the partial image storage means and display state information showing  
8 display state of the partial image shown by the partial image information in the partial image file;

9 (c) a page information storage means for having a plurality of separate small  
10 storage areas, each of which is used for storing at least a piece of page information which is  
11 made up of multi-media information that describes contents of a plurality of screen images;

12 (d) a partial image list write means for writing a pair of the partial image  
13 information and the display state information in a first small storage area in the page information  
14 storage means along with the Ids of the partial image information and the display state  
15 information, after reading partial image information from the partial image file whose name is  
16 inputted, the display state information being inputted according to the partial image information;

Patent  
52478-0900

17 (e) a control information input means for receiving input of control  
18 information which includes a name of input signal and display state change command instructing  
19 to change display state of the partial image corresponding to the input signal;

20 (f) a control information write means for writing the inputted control  
21 information in a second small storage area in the page information storage means; and

22 (g) a page information record means for recording contents of a piece of page  
23 information in one file in the data server after transmitting contents written as a piece of page  
24 information in each storage area in the page information storage means to a data server along  
25 with its write request.

1 17. (Original) The multi-media information record device of claim 16, wherein the  
2 control information includes animation display command instructing to change and display state  
3 information of the partial image corresponding to the elapsed time;

4 wherein the control information input means further includes an animation display  
5 command input unit for receiving input of a pair of an input signal and the animation display  
6 command;

7 wherein the multi-media information record device further includes:

8 (a) a time sequence control information input means for receiving time  
9 sequence control information including animation control information, the  
10 animation control information describing how display state of the partial image  
11 changes according to the elapsed time; and

Patent  
52478-0900

12 (b) a time sequence control information write means for writing the  
13 inputted time sequence control information in a third small storage area in the  
14 page information storage means.

1 18. (Original) The multi-media information record device of claim 17, wherein the  
2 partial image list input means further includes a display state information input unit for receiving  
3 input of display state information for each piece of partial image information, the display  
4 information including X-Y coordinates showing a display position of the partial image to be  
5 displayed on the screen, X-Y enlargement rates showing a ratio of size of the partial image  
6 shown by the partial image information and a partial image to be displayed on the screen, and a  
7 rotational angle between the partial image shown by the partial image information and a partial  
8 image to be displayed on the screen;

9 wherein the time sequence control information input means receives input of  
10 animation control information which describes how at least one among the values of the X-Y  
11 coordinates, the X-Y enlargement rates, and the rotational angle changes corresponding to the  
12 elapsed time.

1 19. (Currently Amended) A multi-media information record device for recording  
2 multi-media information in a disc, comprising:

3 (a) a partial image storage means for storing the partial image information of  
4 at least one partial image in one partial image file, the partial image information being a part of  
5 the screen image;

Patent  
52478-0900

6 (b) a partial image list input means for receiving input of a name of at least  
7 one partial image file in the partial image storage means and display state information showing  
8 display state of the partial image shown by the partial image information in the partial image file;

9 wherein the partial image list input means further includes a display state  
10 information input unit for receiving input of display state information for each piece of partial  
11 image information, the display information including X-Y coordinates showing a display  
12 position of the partial image to be displayed on the screen, X-Y enlargement rates showing a  
13 ratio of size of the partial image shown by the partial image information and a partial image to be  
14 displayed on the screen, and a rotational angle between the partial image shown by the partial  
15 image information and a partial image to be displayed on the screen;

16 (c) a page information storage means for having a plurality of separate small  
17 storage areas, each of which is used for storing at least a piece of page information;

18 (d) a partial image list write means for writing a pair of the partial image  
19 information and the display state information in a first small storage area in the page information  
20 storage means along with the Ids of the partial image information and the display state  
21 information, after reading partial image information from the partial image file whose name is  
22 inputted, the display state information being inputted according to the partial image information;

23 (e) a control information input means for receiving input of control  
24 information which includes a name of input signal and display state change command instructing  
25 to change display state of the partial image corresponding to the input signal;

26 wherein the control information includes animation display command instructing  
27 to change and display state information of the partial image corresponding to the elapsed time;

Patent  
52478-0900

28 wherein the control information input means further includes an animation display  
29 command input unit for receiving input of a pair of an input signal and the animation display  
30 command;

31 (f) a control information write means for writing the inputted control  
32 information in a second small storage area in the page information storage means;

33 (g) a page information record means for [successively] recording information,  
34 which is written as a piece of page information in each small storage area in the page information  
35 storage means, in a storage area on the disc;

36 (h) a time sequence control information input means for receiving time  
37 sequence control information including animation control information, the animation control  
38 information describing how display state of the partial image changes according to the elapsed  
39 time;

40 wherein the time sequence control information input means receives input of  
41 animation control information which describes how at least one among the values of the X-Y  
42 coordinates, the X-Y enlargement rates, and the rotational angle changes corresponding to the  
43 elapsed time;

44 (i) a time sequence control information write means for writing the inputted  
45 time sequence control information in a third small storage area in the page information storage  
46 means;

47 (j) a time sequence information storage means having a piece of time  
48 sequence information stored in each time sequence information file, the time sequence  
49 information having information written in order of playback corresponding to the elapsed time;  
50 and

Patent  
52478-0900

51           (k)    a time sequence information record means for [successively] recording time  
52   sequence information in a storage area on the disc after receiving input of a name of at least one  
53   time sequence information file in the time sequence information storage means, reading time  
54   sequence information from the time sequence information file whose name is inputted, and  
55   correlating the time sequence information with a name of time sequence information  
56   corresponding to the name of the file;

57           wherein the control information input means further includes a time sequence  
58   processing start command input unit for receiving input of a pair of an input signal and a time  
59   sequence processing start command in the control information, the time sequence processing  
60   start command instructing to start execution of time sequence processing corresponding to the  
61   elapsed time and being included in the control information;

62           wherein the time sequence control information input means further includes a  
63   time sequence processing control information input unit for receiving input of the time sequence  
64   processing control information which includes a name of time sequence information to be played  
65   back according to the time sequence processing start command, lds showing contents of the time  
66   sequence information to be played back at predetermined times, and playback state information  
67   which describes how the time sequence information should be played back in accordance with  
68   display of the partial image list, the time sequence processing control information being included  
69   in the time sequence control information.

Patent  
52478-0900

1           20. (Original) The multi-media information record device of claim 19, wherein the  
2 time sequence information includes first time sequence information in which sound information  
3 is divided into predetermined equal data sizes, the sound information being written along with its  
4 ID in order of playback corresponding to the elapsed time;

5           wherein the time sequence information record means includes a first time  
6 sequence information record unit for recording first time sequence information in the disc after  
7 reading the first time sequence information from the time sequence information file, whose name  
8 is inputted, when a name of the first time sequence information is inputted; and

9           wherein the time sequence processing control information input unit includes first  
10 time sequence processing control information input unit for receiving input of first time sequence  
11 processing control information which includes a name of first time sequence information to be  
12 played back according to time sequence processing start command of the page information, IDs  
13 of sound information to be played back at predetermined times, and playback state information  
14 which describes how the sound information should be played back in accordance with display of  
15 the partial image shown by the partial image information in the partial image list, the first time  
16 sequence control information being included in the time sequence processing control  
17 information.

1           21. (Original) The multi-media information record device of claim 19, wherein the  
2 time sequence information record means includes a second time sequence information record  
3 unit for recording second time sequence information in the disc after reading the second time  
4 sequence information from the time sequence information file, whose name is inputted, when a  
5 name of the second time sequence information is inputted, the second time sequence information

Patent  
52478-0900

6 having sound information divided into predetermined equal data sizes, image information  
7 showing one screen image of at least one of animation and dynamic picture and Ids of the sound  
8 information and the image information written in order of playback corresponding to the elapsed  
9 time; and

10 wherein the time sequence processing control information input unit includes a  
11 second time sequence processing control information input unit for receiving input of second  
12 time sequence processing control information which includes a name of second time sequence  
13 information to be played back according to time sequence processing start command of the page  
14 information, pairs of Ids of sound information and image information to be played back at  
15 predetermined times, and the playback state information describing at least one of dynamic  
16 picture and animation should be displayed in an area relating to partial image shown by the  
17 partial image information in the partial image list.

1 22. (Original) A multi-media information record device for recording multi-media  
2 information in a data server connected via a network, comprising:

3 (a) a partial image storage means for storing the partial image information of  
4 at least one partial image in one partial image file, the partial image information being a part of  
5 the screen image;

6 (b) a partial image list input means for receiving input of a name of at least  
7 one partial image file in the partial image storage means and display state information showing  
8 display state of the partial image shown by the partial image information in the partial image file;



Patent  
52478-0900

9 (c) a page information storage means for having a plurality of separate small  
10 storage areas, each of which is used for storing at least a piece of page information which is  
11 made up of multi-media information that describes contents of a plurality of screen images;

12 (d) a partial image list write means for writing a pair of the partial image  
13 information and the display state information in a first small storage area in the page information  
14 storage means along with the Ids of the partial image information and the display state  
15 information, after reading partial image information from the partial image file whose name is  
16 inputted, the display state information being inputted according to the partial image information;

17 wherein the partial image list input means further includes a display state  
18 information input unit for receiving input of display state information for each piece of partial  
19 image information, the display information including X-Y coordinates showing a display  
20 position of the partial image to be displayed on the screen, X-Y enlargement rates showing a  
21 ratio of size of the partial image shown by the partial image information and a partial image to be  
22 displayed on the screen, and a rotational angle between the partial image shown by the partial  
23 image information and a partial image to be displayed on the screen;

24 (e) a control information input means for receiving input of control  
25 information which includes a name of input signal and display state change command instructing  
26 to change display state of the partial image corresponding to the input signal;

27 wherein the control information includes animation display command instructing  
28 to change and display state information of the partial image corresponding to the elapsed time;

29 wherein the control information input means further includes an animation display  
30 command input unit for receiving input of a pair of an input signal and the animation display  
31 command;

Patent  
52478-0900

32 (f) a control information write means for writing the inputted control  
33 information in a second small storage area in the page information storage means;

34 (g) a page information record means for recording contents of a piece of page  
35 information in one file in the data server after transmitting contents written as a piece of page  
36 information in each storage area in the page information storage means to a data server along  
37 with its write request;

38 (h) a time sequence control information input means for receiving time  
39 sequence control information including animation control information, the animation control  
40 information describing how display state of the partial image changes according to the elapsed  
41 time;

42 wherein the time sequence control information input means receives input of  
43 animation control information which describes how at least one among the values of the X-Y  
44 coordinates, the X-Y enlargement rates, and the rotational angle changes, corresponding to the  
45 elapsed time;

46 (i) a time sequence control information write means for writing the inputted  
47 time sequence control information in a third small storage area in the page information storage  
48 means;

49 (j) a time sequence information storage means having a piece of time  
50 sequence information stored in each time sequence information file, the time sequence  
51 information having information written in order of playback corresponding to the elapsed time;  
52 and

53 (k) a time sequence information record means for recording contents of time  
54 sequence information in one file in the data server for each piece of time sequence information,

Patent  
52478-0900

55 after receiving a name of at least one time sequence information file in the time sequence  
56 information storage means, reading time sequence information from the time sequence  
57 information file whose name is inputted, correlating the time sequence information with a name  
58 of time sequence information corresponding to the file, and transmitting the time sequence  
59 information to the data server along with its write request;

60 wherein the control information input means further includes a time sequence  
61 processing start command input unit for receiving input of a pair of an input signal and a time  
62 sequence processing start command in the control information, the time sequence processing  
63 start command instructing to start execution of time sequence processing corresponding to the  
64 elapsed time and being included in the control information; wherein the time sequence control  
65 information input means further includes a time sequence processing control information input  
66 unit for receiving input of the time sequence processing control information which includes a  
67 name of time sequence information to be played back according to the time sequence processing  
68 start command, IDs showing contents of the time sequence information to be played back at  
69 predetermined times, and playback state information which describes how the time sequence  
70 information should be played back in accordance with display of the partial image shown by the  
71 partial image information in the partial image list, the time sequence processing control  
72 information being included in the time sequence control information.

1 23. (Original) The multi-media information record device of claim 22, wherein the  
2 time sequence information includes first time sequence information in which sound information  
3 is divided into predetermined equal data sizes, the sound information being written along with its  
4 ID in order of playback corresponding to the elapsed time; wherein the time sequence

Patent  
52478-0900

5 information record means includes a first time sequence information record unit for recording  
6 first time sequence information in the disc after reading the first time sequence information from  
7 the time sequence information file, whose name is inputted, when a name of the first time  
8 sequence information is inputted; wherein the time sequence processing control information  
9 input unit includes first time sequence processing control information input unit for receiving  
10 input of first time sequence processing control information which includes a name of first time  
11 sequence information to be played back according to time sequence processing start command of  
12 the page information, IDs of sound information to be played back at predetermined times, and  
13 playback state information which describes how the sound information should be played back in  
14 accordance with display of the partial image shown by the partial image information in the  
15 partial image list, the first time sequence control information being included in the time sequence  
16 processing control information.

1 24. (Original) The multi-media information record device of claim 22, wherein the  
2 time sequence information record means includes a second time sequence information record  
3 unit for recording second time sequence information in the disc after reading the second time  
4 sequence information from the time sequence information file, whose name is inputted, when a  
5 name of the second time sequence information is inputted, the second time sequence information  
6 having sound information divided into predetermined equal data sizes, image information  
7 showing one screen image of at least one of animation and dynamic picture and IDs of the sound  
8 information and the image information written in order of playback corresponding to the elapsed  
9 time;

Patent  
52478-0900

10            wherein the time sequence processing control information input unit includes a  
11            second time sequence processing control information input unit for receiving input of second  
12            time sequence processing control information which includes a name of second time sequence  
13            information to be played back according to time sequence processing start command of the page  
14            information, pairs of Ins of sound information and image information to be played back at  
15            predetermined times, and the playback state information describing at least one of dynamic  
16            picture and animation should be displayed in an area relating to partial image shown by the  
17            partial image information in the partial image list.

1            25.    (Currently Amended) A multi-media information playback device which plays  
2            back multi-media information recorded in a recording medium comprising:

3            (a)    a disc having pieces of page information [successively] stored in a storage  
4            area, each piece of page information being made up of multi-media information that describes  
5            contents of a plurality of screen images, the page information including:

6            (1)    a partial image list having a pair of partial image information  
7            showing a partial image of a screen image and display state information showing  
8            display state of the partial image,

9            (2)    control information which describes a command to be executed  
10           according to an input signal, the control information including:

11           a display state change command instructing to change the display  
12           state of the partial image;

Patent  
52478-0900

13 an animation display command instructing to change and display  
14 the display state information of the partial image corresponding to elapsed  
15 time; and

16 a time sequence processing start command instructing to start  
17 execution of time sequence processing corresponding to the elapsed time;

18 (3) time sequence control information having information,  
19 which should be played back according to the elapsed time, stored in order  
20 of playback, the time sequence control information including:

21 (a) animation control information which describes  
22 values of the display state information of the partial image  
23 corresponding to the elapsed time; and

24 (b) time sequence processing control information  
25 having a name of time sequence information to be played back  
26 according to the time sequence processing start command, IDs  
27 showing contents of the time sequence information to be played  
28 back at predetermined times, and playback state information  
29 describing how the time sequence information should be played  
30 back in accordance with display of the partial image shown by the  
31 partial image information in the partial image list;

32 (b) a page information read means for reading a piece of page information  
33 from the disc;

34 (c) a display data creation means for creating display data of the screen image  
35 by placing the partial image shown by the partial image information on a screen;

Patent  
52478-0900

36 (d) a display means for displaying each display data created by the display  
37 data creation means;

38 (e) an input means for receiving an input signal from an operator; and

39 (f) a command execution means for detecting the input signal inputted by the  
40 operator, judging whether the input signal corresponds to the command described by the control  
41 information in the page information read by the page information read means, and instructing the  
42 display data creation means to create new display data by changing the display state of the  
43 corresponding partial image according to the display state change command when the input  
44 signal corresponds to the display state change command; the command execution means  
45 including:

46 (1) a first timer for measuring the elapsed time after start of activation;

47 (2) an animation display command execution unit for activating the  
48 first timer when an input signal corresponding to the animation display command  
49 is detected, calculating values of the display state information corresponding to  
50 the elapsed time of each of the partial images based on the animation control  
51 information at predetermined times, instructing the display data creation means to  
52 create new display data by changing the display state of the partial image  
53 according to the calculated values of the display state information, and stopping  
54 the first timer when execution of the animation display command is completed;

55 (3) a second timer for measuring the elapsed time after the start of  
56 activation; and

57 (4) a time sequence processing execution unit for activating the second  
58 timer when an input signal corresponding to the time sequence processing start

Patent  
52478-0900

59 command is detected, designating contents of the time sequence information  
60 corresponding to the elapsed time, and stopping the second timer when playback  
61 of the time sequence information is completed;  
62 wherein the display data creation means creates new display data according to the  
63 animation display command execution unit;  
64 (g) a page storage means, which is implemented by RAM, for storing the page  
65 information read by the page information read means;  
66 (h) a time sequence information read means for reading the time sequence  
67 information designated by the time sequence processing execution unit from the disk; and  
68 (i) a playback means for playing back the time sequence information read by  
69 the time sequence information read means, and instructing the display means to display the time  
70 sequence information.

1 26. (Currently Amended) A multi-media information playback device which plays  
2 back multi-media information recorded in a recording medium comprising:

3 (a) a disc having pieces of page information [successively] stored as one file  
4 from a data server connected via a network, each piece of page information being made up of  
5 multi-media information that describes contents of a plurality of screen images, the page  
6 information including:

7 (1) a partial image list having a pair of partial image information  
8 showing a partial image of a screen image and display state information showing  
9 display state of the partial image,



Patent  
52478-0900

10 (2) control information which describes a command to be executed  
11 according to an input signal, the control information including:

12 a display state change command instructing to change the display  
13 state of the partial image;

14 an animation display command instructing to change and display  
15 the display state information of the partial image corresponding to elapsed  
16 time; and

17 a time sequence processing start command instructing to start  
18 execution of time sequence processing corresponding to the elapsed time;

19 (3) time sequence control information having information, which  
20 should be played back according to the elapsed time, stored in order of playback,  
21 the time sequence control information including:

22 (a) animation control information which describes values of  
23 the display state information of the partial image corresponding to the  
24 elapsed time; and

25 (b) time sequence processing control information having a  
26 name of time sequence information to be played back according to the  
27 time sequence processing start command, IDs showing contents of the  
28 time sequence information to be played back at predetermined times, and  
29 playback state information describing how the time sequence information  
30 should be played back in accordance with display of the partial image  
31 shown by the partial image information in the partial image list;

Patent  
52478-0900

- 32                   (b)    a page information read means for reading a piece of page information  
33    from the disc;
- 34                   (c)    a display data creation means for creating display data of the screen image  
35    by placing the partial image shown by the partial image information on a screen;
- 36                   (d)    a display means for displaying each display data created by the display  
37    data creation means;
- 38                   (e)    an input means for receiving an input signal from an operator; and
- 39                   (f)    a command execution means for detecting the input signal inputted by the  
40    operator, judging whether the input signal corresponds to the command described by the control  
41    information in the page information read by the page information read means, and instructing the  
42    display data creation means to create new display data by changing the display state of the  
43    corresponding partial image according to the display state change command when the input  
44    signal corresponds to the display state change command; the command execution means  
45    including:
- 46                        (1)    a first timer for measuring the elapsed time after start of activation;
- 47                        (2)    an animation display command execution unit for activating the  
48    first timer when an input signal corresponding to the animation display command  
49    is detected, calculating values of the display state information corresponding to  
50    the elapsed time of each of the partial images based on the animation control  
51    information at predetermined times, instructing the display data creation means to  
52    create new display data by changing the display state of the partial image  
53    according to the calculated values of the display state information, and stopping  
54    the first timer when execution of the animation display command is completed;

Patent  
52478-0900

55                   (3)     a second timer for measuring the elapsed time after the start of  
56                   activation; and  
57                   (4)     a time sequence processing execution unit for activating the second  
58                   timer when an input signal corresponding to the time sequence processing start  
59                   command is detected, designating contents of the time sequence information  
60                   corresponding to the elapsed time, and stopping the second timer when playback  
61                   of the time sequence information is completed;  
62                   wherein the display data creation means creates new display data according to the  
63                   animation display command execution unit;  
64                   (g)     a page storage means, which is implemented by RAM, for storing the page  
65                   information read by the page information read means;  
66                   (h)     a time sequence information read means for reading the time sequence  
67                   information designated by the time sequence processing execution unit from the time sequence  
68                   information stored as one file in the data server via a network, the time sequence information  
69                   having contents in order of playback corresponding to the elapsed time and its name being  
70                   included in the time sequence control information; and  
71                   (i)     a playback means for playing back the time sequence information read by  
72                   the time sequence information read means, and instructing the display means to display the time  
73                   sequence information.

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**